

Find a good location for open a coffee shop in New York city

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1.Background

The City of New York has estimated 2019 population of 8,336,817 distributed over about 302.6 square miles (784 km²) which is the most populous city in the United States. It is diverse and is the financial capital of the USA. It is multicultural. It provides a lot of business opportunities and business-friendly environment. It has attracted many different players into the market. It is a global hub of business and commerce. The city is a major centre for banking and finance, retailing, world trade, transportation, tourism, real estate, new media, traditional media, advertising, legal services, accountancy, insurance, theatre, fashion, and the arts in the United States. This also means that the market is highly competitive. As it is a highly developed city so the cost of doing business is also one of the highest. Thus, any new business venture or expansion needs to be analysed carefully. The insights derived from the analysis will give a good understanding of the business environment which help in strategically targeting the market. This will help in the reduction of risk. And the Return on Investment will be reasonable.

One of the reason to open a cafe is coffee's massive popularity is here to stay. Around 25% of Americans purchase prepared drinks like lattes or iced coffees at least three times per week and each week, the typical American on average buys takeout or restaurant food 2.4 times, buys 2.5 prepared beverages (like smoothies and brewed coffee)[1]. Therefore, to open a cafe is good choice to start a small business in a big city like New York. However, where to open a cafe is a big and important problem which will decide the cost and future income for the cafe.

2.Method

2.1 Data

For finding a best location of open a new cafe we need get few data about New York.

neighbourhood locations which need the detail of total of 5 boroughs and 306 neighbourhoods.

Link to the dataset is: https://geo.nyu.edu/catalog/nyu_2451_34572

New York city geographical coordinates data will be utilised as input for the Foursquare API, that will be leveraged to provision venues information for each neighbourhood.

Using the REBNY report to check the New York Retail Report

Link: https://www.rebny.com/content/rebny/en/research/retail/Winter_2020_Brooklyn_Retail_Report.html

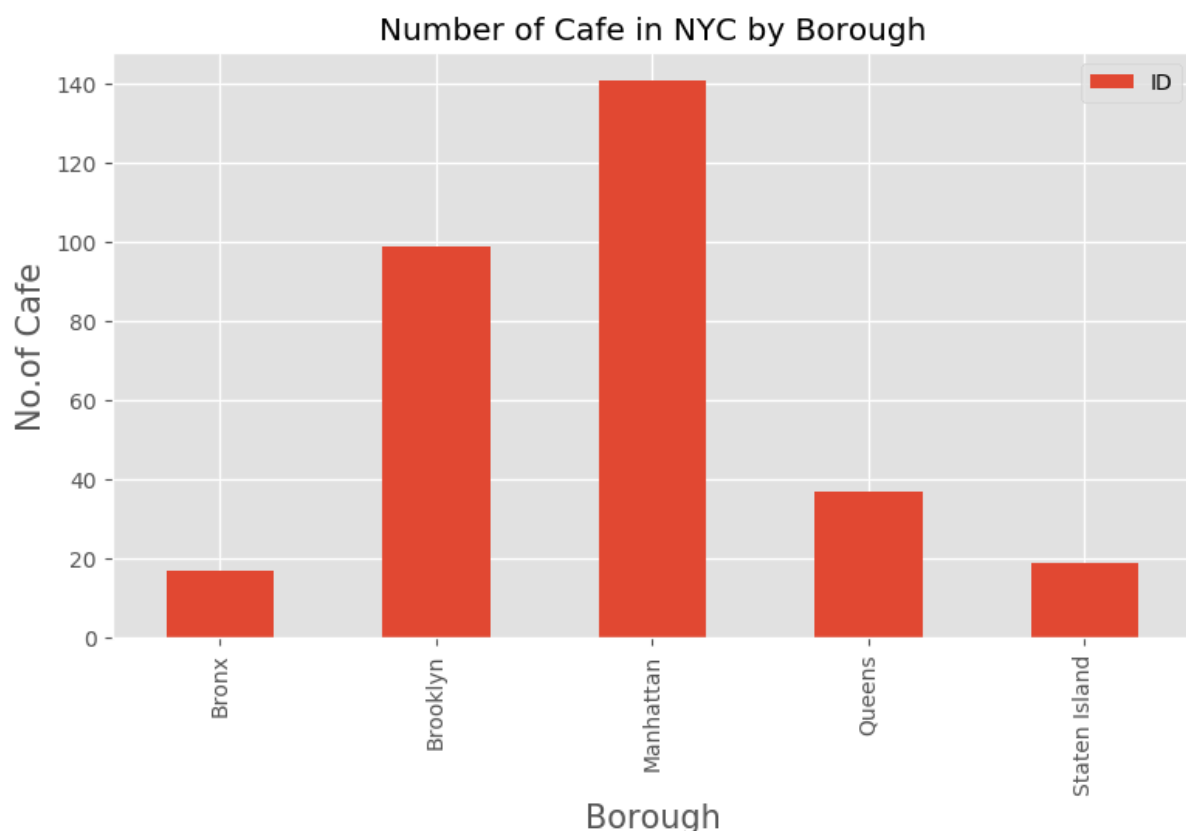
2.2 Software

a. Python 3.8, list of the library:

- a. numpy
- b. pandas
- c. json
- d. geopy
- e. requests
- f. matplotlib
- g. sklearn
- h. folium

b. Foursquare API

3.Result



There are 312 coffee shops in the Foursquare API database in New York and Manhattan have the highest number of coffee shops, Brooklyn is following. others are not very outstanding (fig: Number of Cafe in NYC by Borough). Also, it is match with the density of population that Manhattan and Brooklyn have the higher density of population than other boroughs.

When we look at the “Rating”, number of “Likes” and number of “Tips” on the Foursquare API, we will find out most of coffee shops on the top 15 list are in the Brooklyn. Therefore, Brooklyn has more population of coffee lovers.

Table :Top 15 coffee shop by Rating in New York

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
46	Brooklyn	Carroll Gardens	58d933702f91cb026f478e38	East One Coffee Roasters	242.0	9.2	34.0
47	Brooklyn	Carroll Gardens	5d7ce692b4fc9c0008394021	Hungry Ghost	19.0	8.9	0.0
16	Brooklyn	Greenpoint	576eb1f5cd10a371033f7ad6	Maman	175.0	8.9	36.0
15	Brooklyn	Greenpoint	518cf9ec498e8c38bda0268d	Homecoming	215.0	8.8	44.0
33	Brooklyn	Bushwick	55e9fe71498e8edb034385a7	Dweebs	86.0	8.8	20.0
28	Brooklyn	Prospect Heights	5a6cc216f5e9d763b7a37c8f	Gran Caffè De Martini	25.0	8.8	7.0
output; double click to hide		Brooklyn	55b02e05498ef881a3a44c6d	The Flat's BK Speed Coffee	83.0	8.7	16.0
27	Brooklyn	Prospect Heights	4a2407e6f964a520ef7d1fe3	Sit & Wonder	304.0	8.7	116.0
41	Brooklyn	Brooklyn Heights	59d7872e5a2c911745c2e8ca	Joe Coffee	92.0	8.7	12.0
7	Bronx	Van Nest	4c1c5630e9c4ef3b4ccd45aa	Conti's Pastry Shoppe	47.0	8.5	15.0
20	Brooklyn	Greenpoint	55cf6244498e24c4ebe3ae0b	Sweetleaf	169.0	8.5	24.0
0	Bronx	Kingsbridge	5660c06b498e4003dba169a5	Mon Amour Coffee & Wine	22.0	8.4	7.0
40	Brooklyn	Brooklyn Heights	4de26e06814df7ebdc14af8b	Vineapple Cafe	465.0	8.4	151.0
17	Brooklyn	Greenpoint	58b6e16ffc73d40233da9715	odd fox	39.0	8.3	7.0
1	Manhattan	Marble Hill	55f81cd2498ee903149fcc64	Starbucks	24.0	8.2	2.0

In the top 15 rating table, there are 12 coffee shops are from Brooklyn, and top 9 are all from Brooklyn. Only one chain coffee shop are on the list and at the last place.

Table :Top 15 coffee shop by number of "Likes" in New York

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
40	Brooklyn	Brooklyn Heights	4de26e06814df7ebdc14af8b	Vineapple Cafe	465.0	8.4	151.0
27	Brooklyn	Prospect Heights	4a2407e6f964a520ef7d1fe3	Sit & Wonder	304.0	8.7	116.0
43	Brooklyn	Cobble Hill	55423f82498e5156ac21cfb6	Swallow Cafe	253.0	7.9	47.0
46	Brooklyn	Carroll Gardens	58d933702f91cb026f478e38	East One Coffee Roasters	242.0	9.2	34.0
15	Brooklyn	Greenpoint	518cf9ec498e8c38bda0268d	Homecoming	215.0	8.8	44.0
16	Brooklyn	Greenpoint	576eb1f5cd10a371033f7ad6	Maman	175.0	8.9	36.0
20	Brooklyn	Greenpoint	55cf6244498e24c4ebe3ae0b	Sweetleaf	169.0	8.5	24.0
19	Brooklyn	Greenpoint	4d8f7d48d265236a02c72117	Upright Coffee	157.0	7.8	49.0
21	Brooklyn	Brighton Beach	4b59aedcf964a520999228e3	Starbucks	129.0	6.5	37.0
41	Brooklyn	Brooklyn Heights	59d7872e5a2c911745c2e8ca	Joe Coffee	92.0	8.7	12.0
35	Brooklyn	Bushwick	54c595e2498e9ffb3d369250	Bushwick Public House	87.0	7.3	20.0
33	Brooklyn	Bushwick	55e9fe71498e8edb034385a7	Dweebs	86.0	8.8	20.0
23	Brooklyn	Flatbush	5172b2d4498e646485496d05	Coffee Mob	84.0	7.8	29.0
29	Brooklyn	Williamsburg	55b02e05498ef881a3a44c6d	The Flat's BK Speed Coffee	83.0	8.7	16.0
31	Brooklyn	Williamsburg	5659be63498e1bd863c1e601	Northerly	69.0	7.6	13.0

Table :Top 15 coffee shop by number of "Tips" in New York

	Borough	Neighborhood	ID	Name	Likes	Rating	Tips
40	Brooklyn	Brooklyn Heights	4de26e06814df7ebdc14af8b	Vineapple Cafe	465.0	8.4	151.0
27	Brooklyn	Prospect Heights	4a2407e6f964a520ef7d1fe3	Sit & Wonder	304.0	8.7	116.0
19	Brooklyn	Greenpoint	4d8f7d48d265236a02c72117	Upright Coffee	157.0	7.8	49.0
43	Brooklyn	Cobble Hill	55423f82498e5156ac21cfb6	Swallow Cafe	253.0	7.9	47.0
36	Brooklyn	Bushwick	4ee74dca7ee5cae3f273d82e	Central Cafe	61.0	6.2	45.0
15	Brooklyn	Greenpoint	518cf9ec498e8c38bda0268d	Homecoming	215.0	8.8	44.0
21	Brooklyn	Brighton Beach	4b59aedcf964a520999228e3	Starbucks	129.0	6.5	37.0
16	Brooklyn	Greenpoint	576eb1f5cd10a371033f7ad6	Maman	175.0	8.9	36.0
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33	Brooklyn	Bushwick	55e9fe71498e8edb034385a7	Dweebs	86.0	8.8	20.0
44	Brooklyn	Cobble Hill	580d0a4838fa8cf0e28e76c2	Espresso Me	48.0	6.9	16.0
29	Brooklyn	Williamsburg	55b02e05498ef881a3a44c6d	The Flat's BK Speed Coffee	83.0	8.7	16.0

In the Top 15 coffee shops by number of “Likes”, all the coffee shops are from Brooklyn and they have a good Rating too which means they have a lot customers visit there and like them.

In the Top 15 coffee shops by number of “Tips”, there showing same result with the table of top 15 coffee shops by number of “Likes”.

From the *Winter 2020 Brooklyn Retail Report* [2], we can get the retail rent information in Brooklyn. From that we find out that Williamsburg's rent is \$87 - \$276 per square foot, Greenpoint's rent is \$69 - \$70 per square foot, Park Slope's rent is around \$99 per square foot, Downtown Brooklyn's rent is \$157 - \$296 per square foot, Dumbo's rent is around \$60 per square foot, Cobble Hill's rent is \$95 - \$120 per square foot and Prospect Heights' rent is \$120 per square foot.

4. Conclusion

If you want open a coffee shop in New York, Brooklyn area is the better choices. For the small business or a new coffee shop Dumbo and Greenpoint are the two good location choice because they have lower rent.

Reference

1. <https://www.bankrate.com/personal-finance/smart-money/financial-vices-september-2018/>
2. https://www.rebny.com/content/dam/rebny/Documents/PDF/News/Research/Retail%20Reports/2020_Winter_BrooklynRetailReport.pdf